



United States Department of the Interior

NATIONAL PARK SERVICE

North Cascades National Park
Lake Chelan National Recreation Area
Ross Lake National Recreation Area
810 State Route 20
Sedro-Woolley, Washington 98284-9394

December 4, 2017

Memorandum

To: Martha Lee, Acting Regional Director, Pacific West Region

From: Karen F. Taylor-Goodrich, Superintendent, North Cascades National Park Service Complex 

Through: Stephen J. Mitchell, PE, Operations/Environmental Programs Branch Chief, Pacific West Region
STEPHEN MITCHELL Digitally signed by STEPHEN MITCHELL
DN: c=US, o=U.S. Government, ou=Department of the Interior, ou=National Park Service, cn=STEPHEN MITCHELL, 0.9.2342.19200300.100.1.1=14001000377357
Date: 2017.12.05 07:28:26 -08'00'

Subject: Engineering Evaluation & Cost Analysis Approval Memorandum for Newhalem Penstock Site, Ross Lake National Recreation Area

1.0 PURPOSE

This memorandum recommends and documents the decision of the National Park Service (NPS) to conduct an Engineering Evaluation/Cost Analysis (EE/CA) pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq., for the Newhalem Penstock Site, Ross Lake National Recreation Area in Washington State. NPS is the CERCLA lead agency with authority to respond to the release or threatened release of hazardous substances at or from the Site. This Memorandum was prepared in accordance with CERCLA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. Part 300, and the U.S. Environmental Protection Agency's (EPA) Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA, OSWER Publication 9360.0-32 (August 1993).

2.0 BACKGROUND

The Newhalem Penstock Site is located within Ross Lake National Recreation Area, directly across the Skagit River (on the south side) from Newhalem, Whatcom County, Washington. The aboveground portion of the penstock is located on a steep and somewhat rocky slope above the Newhalem powerhouse, and roughly 600 feet from the Skagit River where the diverted water of Newhalem Creek enters this tributary to Puget Sound. The Skagit River supports all five native species of salmon (including federally threatened Puget Sound Chinook salmon), as well as federally listed (threatened) Puget Sound steelhead and bull trout. An intermittent stream runs adjacent to the penstock, flowing down the slope to the powerhouse. Intermittent stream outflow enters the tailrace of Newhalem Creek

Engineering Evaluation & Cost Analysis Approval Memorandum
for Newhalem Penstock Site, Ross Lake National Recreation Area

and after passing over a fish barrier, discharges into the Skagit River. In August 2015, wildfires burned much of the surrounding area, including several of the wooden penstock saddle supports, reducing native vegetation and increasing runoff and the potential for erosion in the immediate vicinity. A trail system between the NPS Newhalem Campground (approximately one quarter mile west of the Site) and a footbridge leading to “downtown” Newhalem (approximately one quarter mile east of the Site) parallels the Skagit River immediately downslope from the penstock at the site of the Newhalem Powerhouse, and a steep trail leads up the slope past the powerhouse and upper sections of the penstock.

The Newhalem penstock is part of the Newhalem Creek Hydroelectric Project, operated by Seattle City Light (SCL) under a Federal Energy Regulatory Commission (FERC) license, which is comprised of a powerhouse, penstock, bedrock power tunnel, and creek diversion structure. The penstock was originally constructed by SCL in the 1920s as part of the power plant used during construction of the Gorge Dam and continues to convey water to the Newhalem powerhouse for power generation. The penstock is 1,122 feet long, approximately 904 feet of which is above ground. The remaining 218 feet is located within a bedrock tunnel. The aboveground portion of the 30- to 33-inch diameter penstock formerly rested on wood frame supports, or pedestals, with bases of wood and concrete, through 2017. Of the original penstock saddles, all 52 were made from treated wood. Several of these saddles were damaged in an August 2015 wildland fire (the Goodell Fire), and temporary supports were installed at four saddle locations as an emergency project to prevent the penstock from being damaged by buckling. SCL replaced all the saddles with cast-in-place concrete pedestals in 2016-2017. In the course of removing the saddles, approximately 171 tons of soil was also removed and disposed of offsite as contaminated soil.

The Newhalem penstock has been maintained by SCL to provide power generation for the residents of Newhalem since its construction in the 1920s. It is not known with certainty if sandblasting was used to remove old coats of paint, which may have contained lead, before repainting the penstock; however, no indications of sandblast grit have been observed at the site. Much sandblast grit used historically in the Puget Sound region was derived from slag and may have contained heavy metals including lead, arsenic, copper, and zinc. In addition, the original wood supports from the penstock may have been preserved with copper chromium arsenate (CCA), creosote, or pentachlorophenol, all of which were used historically to retard the growth of moss and fungi. If wood preservatives were used, these chemicals may have leached into nearby soil.

SCL has conducted two investigations in the project area to date. Soil sampling was conducted in August 2014 in the immediate vicinity of the penstock, and additional sampling was conducted in October 2015 to further evaluate the extent of soil contamination. Samples were also collected in April 2016 from the wood saddles to determine the specific type of preservative(s) in the wood. Results of the soil sampling indicate that soil in the vicinity of the penstock contains/contained levels of lead and arsenic above Washington State’s Model Toxics Control Act (MTCA) cleanup levels. Wood sample analysis results indicate the wood was preserved with coal-tar creosote. In some locations, soil within approximately 2-3 inches of the wood saddles contained levels of carcinogenic PAHs (cPAHs) above MTCA cleanup levels.

Based on SCL’s need to imminently replace the wooden saddles to ensure the ongoing operation of the Newhalem Hydroelectric Project and based on the results from the Site investigations, the NPS approved a Time Critical Removal Action at the Newhalem Penstock Site on September 1, 2016 that

Engineering Evaluation & Cost Analysis Approval Memorandum
for Newhalem Penstock Site, Ross Lake National Recreation Area

authorized the removal and disposal of contaminated soil excavated to complete the scope of work associated with SCL's project to replace the saddles along the penstock. Following this approval, SCL initiated a removal action of contaminated soils in October 2016 and completed the removal and overall saddle replacement project in September 2017.

Over the course of the 11 month project, with a three month hold on on-Site work due to winter rainy season (January-March, 2017), SCL excavated the soils around each saddle location (the amount depended on the depth of soil over bedrock and the total footprint required for construction of the new saddle), classified the material as RCRA Subtitle D non-hazardous material, packaged the soil in bags suited for contaminated material, transported the bags off Site via small trail toters, and disposed of the material at a USEPA-compliant landfill licensed to accept the material. Removal of all the wood saddles included removal of soil surrounding each saddle. Consequently, most of the cPAH-impacts from the saddles was likely removed by the saddle replacement project. Wood waste generated from saddles, designated as "state-only treated wood waste" and excluded from Dangerous Waste Regulations under Washington State Administrative Code (173-303-071(3)(g)(ii)), was disposed of in a municipal solid waste landfill permitted under chapter 173-351 of Washington Administrative Code.

3.0 USE OF REMOVAL ACTION AUTHORITY

Pursuant to Sections 104(a)(1) and (b)(1) of CERCLA, 42 U.S.C. §§ 9604(a)(1) and (b)(1), whenever there is a release or substantial threat of a release of a hazardous substance into the environment, the President is authorized to act, consistent with the NCP, to remove or arrange for the removal of such hazardous substance or take any other response action, including appropriate investigations, deemed necessary to protect public health or welfare or the environment. Section 104(a) and (b) response authority (including the authority to perform an NTCRA, including the EE/CA that is the subject of this Memorandum) has been delegated to the Secretary of the Department of the Interior (DOI) pursuant to Executive Order 12580, 52 Fed. Reg. 2923 (1987), and further delegated to NPS by DOI Departmental Manual Part 207, Chapter 7, with respect to property under the jurisdiction, custody or control of NPS.

Section 300.415(b)(2) of the NCP establishes the criteria for determining the appropriateness of a removal action. The following are applicable criteria that support the determination to consider a removal action at the Site:

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
- ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- iii. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; and
- iv. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

As summarized above, the 2014 and 2015 assessments indicated arsenic, lead, and cPAHs, all CERCLA hazardous substances, were present at elevated concentrations in shallow soils at the Site (criterion iii). Although much of the contamination from the penstock and associated maintenance activities may have been removed from the Site during the Time Critical Removal Action – thereby significantly reducing the potential threat of hazardous materials into the environment, data from the 2014 and 2015

Engineering Evaluation & Cost Analysis Approval Memorandum
for Newhalem Penstock Site, Ross Lake National Recreation Area

investigations show that some lead, arsenic and cPAHs may remain within the surrounding area that are above the MTCA cleanup levels. Furthermore, these initial investigations only compared Site contaminants to cleanup levels protective of human health for unrestricted land use because of the immediate threat of exposure to workers during the execution of the penstock replacement project. For example, these investigations did not include a site-specific terrestrial ecological evaluation to determine chemicals of ecological concern, exposure pathways, terrestrial ecological receptors of concern, and ecological-based cleanup levels. Therefore, while a substantial amount of soil has been removed through implementation of the TCRA since this initial assessment, additional Site characterization is needed to determine if hazardous substances remain on site and if so, if they pose a threat to human health and the environment.

Units of the National Park System are considered sensitive ecosystems. See, e.g., National Park Service Organic Act, 16 U.S.C. § 1 (National Park System units shall be managed "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.").

Based upon these considerations, NPS has determined that the use of removal action authority at Ross Lake National Recreation Area to investigate, abate, prevent, minimize, stabilize, mitigate, and/or eliminate the release or threat of release of hazardous substances at or from the Site is appropriate. Additionally, NPS has determined that a planning period of at least six months exists before additional on-Site activities must be initiated. Therefore, NPS is authorized to conduct an EE/CA (or its equivalent) pursuant to and in accordance with Section 300.415(b)(4) of the NCP. An EE/CA is performed to determine the nature and extent of contamination, assess potential risks posed to human and ecological receptors from exposure to such contamination, identify and evaluate removal action alternatives to address unacceptable risk, and identify a recommended removal action alternative that best meets the evaluation criteria.

4.0 APPROVAL

I Concur:



Date: 12/19/17

Martha Lee
Acting Regional Director
National Park Service, Pacific West Region

I Do Not Concur:

Date: _____

Martha Lee
Acting Regional Director
National Park Service, Pacific West Region